

AMENDMENTS TO THE CLAIMS:

Complete Listing of Claims

1-9 (previously canceled)

10 (canceled)

11-12 previously canceled

1 13. (currently amended) A method for detecting an invalid polygon on a
2 handheld computer device comprising:

3 (a) inputting from a user on a graphical interface a plurality of connected
4 lines to define a polygon;

5 (b) selecting a pair of lines from the plurality of lines that do not share a
6 common starting point;

7 (c) determining if the selected pair of lines crossover;

8 (d) determining the polygon is invalid and indicating to the invalidity to the
9 user if the selected pair of lines crossover; and

10 (e) repeating steps (a)-(c) for remaining pairs of lines from the set of lines.

11 ~~The method of claim 10,~~ wherein the determining line crossover step comprises:

12 determining a starting and ending point for each line in the pair of lines;

13 determining an overlap interval;

14 determining if the overlap interval is a valid interval;

15 calculating a value for each line based on the overlap interval if the
16 overlap interval is valid;

17 comparing the values for each line if the overlap interval is valid; and

18 detecting line crossover based on the comparison if the overlap interval is
19 valid.

1 14. (currently amended) The method of claim 13 ~~40~~, wherein the set of lines
2 is a set of all possible combination of pairs of lines in the polygon.

15-16 previously canceled

1 17. (currently amended) The method of claim 13 ~~40~~, wherein the validity of a
2 polygon is tested after a new line is added to the polygon and before the user
3 completes drawing the polygon.

1 18. (currently amended) The method of claim 13 ~~40~~, wherein the validity of a
2 polygon is tested after it has been completely specified.

1 19. (currently amended) The method of claim 13 ~~40~~, wherein the validity of a
2 polygon is tested only after a user specifies that it be tested.

1 20. (previously added) The method of claim 13, wherein the overlap interval
2 is defined as $[X1, X2]$, and wherein the calculating step comprises calculating an
3 Y-value for each line at the beginning of the overlap interval, $X1$, and an Y-value
4 for each line at the end of the overlap interval, $X2$.

1 21. (previously added) The method of claim 20, wherein a point on each line
2 is specified by an X-value and a Y-value, and wherein the comparing step
3 comprises:

4 comparing the Y-value at $X1$ ($Y1a$) for a first line with the Y-value at $X1$
5 ($Y1b$) for a second line; and

6 comparing the Y-value at X2 (Y2a) for the first line with the Y-value at X2
7 (Y2b) for the second line.

1 22. (previously added) The method of claim 21, wherein a line crossover has
2 occurred if $((Y1a \leq Y1b) \text{ and } (Y2a \geq Y2b))$ or $((Y1a \geq Y1b) \text{ and } (Y2a \leq Y2b))$
3 evaluate true.